

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims.

We claim:

1. (Currently amended) A method of preparing a composition enriched in phenolic compounds, comprising:

- a) providing a crude extract of one or more plant materials that contain phenolic compounds, said extract comprising proanthocyanidins, anthocyanins, and polar non-phenolic compounds;
- b) filtering said crude extract;
- c) contacting said filtered extract with a substituted polymer resin ~~that releasably adsorbs said phenols but does not retain said polar non-phenolic compounds, wherein said substituted resin comprises~~ comprising aromatic rings substituted with one or more electron-withdrawing groups and operative to releasably absorb said phenols but not retain said polar non-phenolic compounds;
- d) washing said resin with a wash eluent to elute said polar non-phenolic compounds;
- e) eluting the resin with a first eluent and collecting a first fraction containing phenolic compounds;
- f) eluting the resin with a second eluent and collecting a second fraction containing phenolic compounds; and
- g) isolating the fraction from step e) or step f) or combining said fractions from steps e) and f) to obtain a composition enriched in phenolic compounds, wherein said composition has decreased levels of said polar non-phenolic compounds as compared to levels of polar non-phenolic compounds in the crude extract.

2. (Previously presented) The method of claim 1, wherein said electron withdrawing group is selected from the group consisting of F, Cl, Br, I, protonated alkyl amines, sulfonic acids, trihalomethyl, and COOH.

3. (Original) The method of claim 1, wherein said resin is a protonated tertiary amine-substituted styrene divinylbenzene copolymer.

4. (Original) The method of claim 1, wherein said crude extract is prepared by extracting dried or fresh plant material(s) with an acidified extraction solvent.

5. (Original) The method of claim 4, wherein said acidified extraction solvent comprises an aqueous solution having between about 0-95% ethanol and between about 0-3% acid or an aqueous solution having between about 0-100% methanol and between about 0-3% acid.

6. (Original) The method of claim 5, wherein said acid is sulfuric acid, acetic acid or hydrochloric acid.

7. (Original) The method of claim 1, wherein said wash eluent contains at least 0.003% acid.

8. (Original) The method of claim 7, wherein said acid is acetic acid, hydrochloric acid or sulfuric acid.

9. (Original) The method of claim 1, wherein said first eluent comprises between about 50 and 70% ethanol in water and 0.003% acid.

10. (Original) The method of claim 9, wherein said acid is acetic acid, hydrochloric acid or sulfuric acid.

11. (Original) The method of claim 1, wherein said second eluent comprises between about 70 and 90% ethanol in water.

12. (Original) The method of claim 1, wherein said composition comprises between about 10-80% of said phenolic compounds.

13. (Original) The method of claim 12, wherein said composition comprises at least 12% of said phenolic compounds.

14. (Original) The method of claim 12, wherein said composition comprises at least 25% of said phenolic compounds.

15. (Currently amended) The method of claim 1, wherein said plant material is selected from the group consisting of blueberries, bilberries,

elderberries, plums, blackberries, strawberries, red currants, black currants, cranberries, cherries, red raspberries, black raspberries, grapes, currants, hibiscus flowers, bell peppers, beans, peas, red cabbage, purple corn, violet sweet potatoes, olives, pomegranates, ~~mangosteens~~, mangosteen, apples, hawthorn, gooseberries, and oranges, and includes the whole plant material or the skins, peels, fruits, nuts, hulls or seeds thereof.

16. (Original) The method of claim 1, wherein step (a) further comprises adding pectinase to said crude extract.

17. (Original) The method of claim 16, wherein said pectinase is present in an amount between about 0 and 0.12% by weight of said plant material.

18. (Original) The method of claim 1, further comprising adding an excipient to said composition.

19. (Original) The method of claim 18, wherein said excipient is selected from the group consisting of preservatives, carriers, buffering agents, thickening agents, suspending agents, stabilizing agents, wetting agents, emulsifying agents, coloring agents and flavoring agents.

20. (Original) The method of claim 1, further comprising

- h) loading said composition from step e), said composition from step f), or said composition from step g) onto a low pressure vacuum liquid chromatography column packed with a reversed-phase lipophilic resin and collecting fractions that elute during said loading;
- i) eluting said resin with water;
- j) combining fractions from steps h) and i) to obtain a first composition enriched in polar proanthocyanidins; and
- k) eluting said resin with increasing amounts of a polar organic solvent to obtain a second composition enriched in non-polar proanthocyanidins.

21. (Previously presented) The method of claim 20, further comprising purifying said first composition by reversed-phase preparative HPLC.

22. (Previously presented) The method of claim 21, further comprising purifying said second composition by gel filtration or preparative HPLC.

23. (Previously presented) A purified plant material-based composition enriched for phenolic compounds prepared without the addition of sulfites, wherein the composition is an extract containing at least 10% of proanthocyanins and decreased levels of anthocyanins as compared to levels of anthocyanins in the original plant material.

24. (Previously presented) The composition of claim 23, wherein said plant material is selected from the group consisting of blueberries, bilberries, cranberries, blueberries, elderberries, plum, raspberries, strawberries, pomegranates, olives, red currants, black currants, cherry, grapes, apples, bananas, hawthorn, mangosteen, orange peels, and gooseberries, and includes the whole plant material or the skins, peels, fruits, nuts, hulls or seeds thereof.

25. (Original) The composition of claim 24 comprising between about 5-30% proanthocyanidins by weight of said composition.

26-29. (Withdrawn)

30. (Currently amended) A method of preparing compositions selectively enriched in proanthocyanidins with decreased concentrations of anthocyanins and polar non-phenolic compounds, comprising:

(a) extracting one or more plant materials containing proanthocyanidins with a solvent to provide a crude extract containing phenolic compounds, said extract comprising proanthocyanidins, anthocyanins, other small phenolics and polar non-phenolic compounds;

(b) filtering the crude extract by means other than size exclusion filtration;

(c) contacting the crude extract with a resin comprising unsubstituted aromatic rings which retains said anthocyanins and releasably adsorbs said proanthocyanidins but does not substantially retain the polar non-phenolic compounds, without the addition of bisulfite ions;

(d) washing said resin with a wash eluent to elute said polar non-phenolic compounds;

(e) eluting the resin at with a first eluent and collecting a first fraction containing said proanthocyanidins;

(f) eluting the resin with a second eluent and collecting a second fraction containing said proanthocyanidins; and

(g) isolating the fractions from step (e) or from step (f) or combining said fractions from steps (e) and (f) to obtain a composition enriched in said proanthocyanidins and decreased levels of said polar non-phenolic compounds and anthocyanins as compared to levels of polar non-phenolic compounds and anthocyanins in the crude extract.

31. (Original) The method of claim 30, wherein said resin is a polystyrene divinylbenzene copolymer.

32. (Original) The method of claim 33, wherein said contacting and washing steps are performed at about room temperature.

33. (Currently amended) The method of claim 30, wherein said plant material is selected from the group consisting of blueberries, bilberries, elderberries, plums, blackberries, strawberries, red currants, black currants, cranberries, cherries, red raspberries, black raspberries, grapes, currants, hibiscus flowers, bell peppers, beans, peas, red cabbage, purple corn, violet sweet potatoes, olives, pomegranates, ~~mangosteens~~, mangosteen, apples, hawthorn, gooseberries, and oranges, and includes the whole plant material or the skins, peels, fruits, nuts, hulls, or seeds thereof.